STATEMENT REGARDING COMMON OWNERSHIP

Applications 60/435,329, 60/454,131, and 10/528,471; and Patent 7,294,189 and its priority applications, were, at the time the invention of Application 10/528,471 was filed, commonly owned and are still commonly owned.

REMARKS

Reconsideration of the above-identified application in view of the amendments above and remarks below is respectfully requested.

Claim Objections

Claims 2 and 27 stand as objected to because of the following informalities:

Claim 2 recites "the alkali illetal hydroxide." It is believed that the claim should read "the alkali metal hydroxide."

Claim 27 recites "a complexing agent selected horn the group." It is believed that the claim should read "a complexing agent selected from the group." Appropriate correction is required.

Claims 2 and 27 have been amended as suggested by the Examiner.

Claim Rejections - 35 *USC § 102*

Claims 1, 2, 4, 12-19, 26 and 27 stand as rejected under 35 U.S.C. 102(e) as being anticipated by Wantling (7294189).

In the office action, the Examiner noted that the applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference (Oct. 11, 2002), it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131. Attached is a declaration by Steven J.

Wantling asserting common inventorship. The subject application and the Examiner's reference, as well as all priority documents, are commonly owned. The Applicant respectfully asserts that the subjection application is condition for allowance in view of Wantling (7294189).

Claims 5-11 are rejected under 35 U.S.C. 1 03(a) as being unpatentable over Wantling '189 as used in the rejection of Claims 1, 2,4, 12-19, 26 and 27 above, and further in view of Song (6010596) and Wantling (6165261).

Wantling '189 is cited by the Examiner as it was used as above. The Examiner acknowledges that Wantling '189 does not disclose the claimed surfactant species. The Examiner cites Song as disclosing a gypsum-wood fiber board having improved water resistance comprising an aqueous wax emulsion containing a paraffinic wax having a melting point from 40-80 °C (104-176 OF), montan wax (a saponifiable wax), a cationic surfactant or emulsifier, calcium sulfate and host particles, polyvinyl alcohol, emulsifiers, stabilizers and water. The host particles are preferably wood fibers. The montan wax is used in an amount from 1 to 200 parts per 100 parts paraffinic wax. Conventional emulsifiers used include sorbitan fatty acid esters, polyoxyethylene sorbitan fatty acid esters, and a cationic surfactant, which are employed in an amount of 0.1 to 5% by weight of the emulsion. Conventional stabilizers added include alkali metal hydroxides and are used in an amount of 0.1 to 1 % by weight of the emulsion. The polyvinyl alcohol is used in an amount from 1 to 50 parts per 100 parts paraffinic wax. Water forms 35% to 80% of the emulsion, thus the waxes, surfactants, stabilizers and polyvinylalcohol form from 20% to 65% of the emulsion (Abs; col 1, lines 4-11; col 3, lines 55-67; col 4, lines 1-8 and 20-45; col 7, lines 30-65; col 8, lines 3-22). Wantling '261 discloses water resistant gypsum board comprising a wax emulsion containing, by weight of the emulsion, about 25% to about 50% of a slack wax generally having a melting point from 110 to 140 of, 1-20% a microcrystalline wax, about 1 to about 10% of a naphthenic oil, about 0.5% to about 10% of an emulsifier, about 0.05% to about 5% of a dispersing agent and water. The claimed sorbitan fatty acid esters and

polyoxyethylene sorbitan fatty acid esters are disclosed. In an example, sorbitan monostearate and polyoxyethylene sorbitan monostearate are each used in an amount of 2.5% by weight of the emulsion (Abs; col 1, line 48 to col 2, line 13; col 3, lines 4-8; col 4, lines 33-39; col 5, lines 14-29, Example 1).

The art of Wantling '189, Song, Wantling '261 and the instant invention is analogous as pertaining to water repellent compositions used in gypsum, gypsum-fiber, paper and fiber containing products. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the claimed surfactants in the composition of Wantling '189 and in view of Song and Wantling '261 as conventional surfactants well known in the art for such compositions.

The Applicant respectfully traverses the Examiner's rejections by swearing behind the Wantling '198 reference in regard to the use of the C_{24} - C_{36} polymerized methylene coupled alkyl phenol in regard to the present invention. The declaration referenced above also discloses that this particular alkyl phenol was in use at least as early as November 8, 2001 in a use-application consistent with the invention claimed in this application. This is prior to October 11, 2002, the earliest priority date for the Wantling '189 patent. This disqualifies use of Wantling '189 as a reference against the present application for 103 purposes.

Since Wantling 189 is disqualified, the Examiner's use of Song by itself cannot stand. Song does not disclose the polymerized methylene coupled alkyl phenol, for example. The claims of the present application are not obvious in view of Wantling 189 and Song.

Claims 1, 2, 4, 12-14 and 26 stand as rejected under 35 U.S.C. 103(a) as unpatentable over Imai (5120355) in view of Manka et al (7026378).

It is the Examiner's position that Imai discloses an emulsion comprising water, one or more waxes (a) having a melting point of 50-90°C (122 to 194 OF), a

hydrocarbon resin (b) (which is in some embodiments an alkyl polyphenol), a salt of a condensation product of β-naphthalene sulfonic acid with formalin (c) (polynaphthalenesulfonic acid), a polyacrylic acid salt (d), an alkali metal hydroxide (e), and a wax dispersant (construed by the Examiner to be a surfactant). The waxes can be a hydrocarbon wax, an oxygen containing wax such as montan or carnuba (saponifiable waxes) or a mixture of the waxes (Abs; col 1, lines 45-52; col 1, line 67 to col 2, line 2; col 2, lines 31-32; col 3, line 54 to col 4, line 16; col 4, lines 60-64; col 5, lines 4-5, 22-28 and 47-51; Claim 15). Imai discloses that the naphthalene sulfonic acid-formalin condensation product functions as an emulsifying agent (acts as a surfactant) and that a mixture of two or more having different structures can be used, thus the emulsion also comprises one or more surfactants (col 4, line 60 to col 5, line 9). Note that the open claim language permits the inclusion of additional additives, such as polyacrylic acid salts.

Regarding the amounts of each component in the composition, Imai discloses the following guidelines: a weight ratio of (a) + (b) to (c) + (d) of 1 :0.01-0.2; a weight ratio of (a) to (b) of 1 :0.1-2; a weight ratio of (c) to (d) of 1 :0.1-1; a weight ratio of (a) +(b) + (c) + (d) to (e) of 1 :0.01-0.1; an amount of surfactant of 1 % or less by weight of the amount of (a) thru (e); an amount of 150 pts or less of saponifiable waxes to 100 parts hydrocarbon wax; an amount of water of 0.8 to 10 times the amount of the above components (col 3, lines 47-53; col 5, lines 34-62). The guidelines embody compositions within the claimed ranges. For example, the following composition is embodied and also falls within the claimed ranges:

Component parts by weight % of emulsion
(a1) hydrocarbon wax 200 32.4
(a2) saponifiable wax 30 4.9
(b) alkyl polyphenol 50 8.1
(c) polynaphthalenesulfonic acid 20 3.2
(d) polyacrylic acid 10 1.6
(e) alkali hydroxide 4.5 0.7
Surfactant 3.1 0.5

Water 300 48.6

TOTAL 617.6 100

Imai discloses that the composition is useful as a water repellent composition for gypsum board, gypsum plaster, cements, paper and fibers (col 6, lines 12-18). Imai does not disclose the claimed polymerized methylene coupled alkyl phenol.

Manka et al discloses adding hydrocarbyl substituted phenols to binder resins for cellulosic composites to increase the water resistance of the material. The hydrocarbyl substituted phenols impart hydrophobicity to various binder resins as well as the composites of cellulosic material and resin binder, and act as a dispersant for wax added to the compositions. The substituted phenols have hydrocarbyl groups containing from 4 to 400 carbon atoms, such as alkyl and alkenyl groups of 12 to 80 carbon atoms (col 1, lines 10-14; col 1, line 50 to col 2, line 9; col 2, lines 44-49; col 4, line 64 to col 5, line 4). In some particularly preferred embodiments, the substituted phenols are coupled by methylene groups through reaction with formaldehyde, thus overlay the claimed methylene coupled alkyl phenols (col 2, lines 2-5; col 3, lines 29-52; col 4, lines 11-63).

The art of Imai, Manka et al and the instant invention is analogous as pertaining to water repellent compositions used in gypsum, gypsum-fiber, paper and fiber containing composites. The composition of Imai has been disclosed for use with gypsum, cement and fibrous products. It would have been obvious to one of ordinary skill in the art to use the claimed methylene coupled alkyl phenol for the hydrocarbon resin in the composition of Imai in view of Manka et al to obtain the water repellent properties thereof and as a dispersant for the waxes in the composition.

The Applicant respectfully traverses the rejection. The Examiner cites Imai and Manka as if one of ordinary skill in the art of would combine the two references, but the two references are to two very different applications. Imai and the present application are to water emulsions for making articles such as gypsum board, gypsum plaster, and

the like water resistant. Imai lacks teaching regarding the alkyl phenol compounds claimed in Claim 1.

Manka is the reference cited by the Examiner as teaching the use of some overlapping alkyl phenol compounds IN RESINS for making cellulose composites. NOTE, the alkyl phenols are included in a binder resin, not a water proofing emulsion. In the applications of Imai and the present invention, there is not necessarily even a binder present and if there is a binder it may not be a binder resin. At column 2, lines 50-55, it is disclosed that the "substituted phenols and/or phenates can be better dispersed in resin binders due to the phenol or phenate portion of the molecule which can react into or associate with phenol-formaldehyde resins. The substituted phenol and/or phenates can also react into other resin binder systems." Clearly these compounds are not in an emulsion and available to interact with a gypsum material.

Neither the reference Imai or the Manka reference even makes mention of one of the main advantages of the invention claimed in the present application, namely the wax anti-buildup characteristic of the present invention. (Disclosed at paragraph 0037).

A person of ordinary skill in the art of preparing water resistance imparting emulsions for a gypsum board product would not be motivated to consider a material that is being incorporated into a resin.

Claims 5-11 are rejected under 35 U.S.C. 1 03(a) as being unpatentable over Imai in view of Manka et ai, as used in the rejection of Claims 1, 2, 4, 12-14 and 26 above, and further in view of Song (6010596) and Wantling (6165261).

Claims 15-19 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Imai in view of Manka et ai, as used in the rejection of Claims 1, 2, 4, 12-14 and 26 above, and further in view of Bates et al (5972094) and even further in view of Kerr (3022184).

The Applicant respectfully traverses the Rejection as follows: In both these rejections, the Examiner cites Imai and Manka et al as they are used in the obviousness rejection above. Claims 5-11, 15-19, and 27 depend, either directly or indirectly from Claims 1 and 26. As already shown above, the Claims 1 and 26 are not obvious in view of Imai and Manka and thus these dependent claims are also not obvious in view of the additional art that was cited soley to pick up the additional elements of these dependent claims.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg, 140* F.3d 1428,46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman,* 11 F.3d 1046,29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi,* 759 F.2d 887, 225 USPQ 645 (Fed. Cir. *1985); In re Van Ornum,* 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel, 422* F.2d 438,164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528,163USPQ 644 (CCPA 1969). A timely filed terminal disclaimer in compliance with 37 CFR 1.321 (c) or 1.321 (d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 4, 12-19,26 and 27 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-7 and 21 of U.S. Patent No. 7473712 in view of Imai. The composition of the patent comprises the same ingredients as the claimed composition with the exceptions that the melting point of the first wax is not claimed and a surfactant is not claimed in the patent. Imai discloses waxes having the claimed melting point as suitable for such compositions. Surfactants are well known in the art as typical components in an emulsion and are also disclosed by Imai in similar compositions. One of ordinary skill in the art would have found it obvious to include the claimed waxes and surfactants in view of Imai.

Claims 1-4,14-19 and 26-27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 and 17 of U.S. Patent No. 7473713 view of Imai. The composition of the patent comprises the same ingredients as the claimed composition with the exceptions that the melting point of the first wax is not claimed and a surfactant is not claimed in the patent.

Imai discloses waxes having the claimed melting point as suitable for such compositions. Surfactants are well known in the art as typical components in an emulsion and are also disclosed by Imai in similar compositions. One of ordinary skill in the art would have found it obvious to include the claimed waxes and surfactants in view of Imai.

The Applicants acknowledge the double patenting rejection, but elect to wait until the scope of such claims as may be allowable is determined prior to taking action regarding same.

CONCLUSION

In light of the above amendments and remarks, it is respectfully submitted that the pending claims of the present application are in condition for allowance. If the Examiner has any questions or requires additional information, she is invited to contact the undersigned.

Respectfully submitted,

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